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(54) Title: SYSTEM AND METHOD FOR DESIGNING RESPONSES FOR ELECTRONIC BILLING STATEMENTS
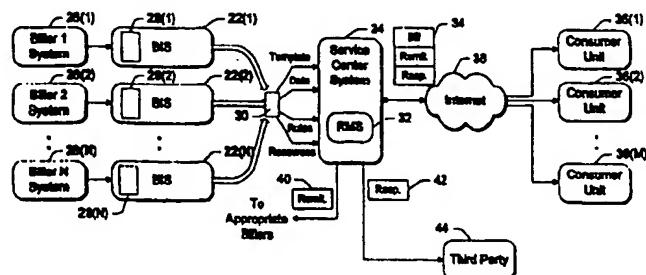
(57) Abstract

An electronic bill response design system provides a set of tools for a biller to create and design electronically (and other) remittable responses to electronically distributed billing statements. The system has a biller integration system implemented at the biller to integrate with existing computerized accounting systems. The biller integration system has a statement response designer to enable the biller to design the responses. The statement response designer offers a response wizard to guide the biller through the process of creating responses. The statement response designer includes a set of predetermined responses from which the biller can elect to include with the electronic billing statement, such as change of address, payment, comment, etc. Additionally, the statement response designer enables the biller to design customized responses that are unique to the biller. The biller integration system also has a response selection rules manager to establish rules concerning when certain responses are conditionally included with the electronic billing statement during electronic distribution. The billing system includes a response management system resident at a billing service to selectively include the responses with the electronic billing statements as dictated by the rules established by the biller integration system. The response management system also handles routing of consumer responses as directed by the response designer. The biller integration system includes a response task processor design component, to permit the development of response processing tasks, and a response task execution framework, which carries out designated response tasks at predetermined intervals as directed by the response designer.

SYSTEM AND METHOD FOR DESIGNING RESPONSES FOR ELECTRONIC BILLING STATEMENTS

TECHNICAL FIELD

This invention relates to electronic billing systems. More particularly, this invention relates to systems and methods for designing responses for electronic billing statements.

BACKGROUND OF THE INVENTION

Essentially everyone is familiar with receiving bills. Every month, like clockwork, millions of consumers and businesses receive bills for goods and services. For convenience, the term "consumer" is used throughout this document to represent both a typical person who consumes goods and services as well as a business that consumes goods and services.

At the end of each billing cycle, a biller generates a bill or statement for each consumer account having a positive or negative account balance, or having transactions that yielded a zero balance. As used herein, a "biller" is any party that originates billing statements for goods or services rendered to the consumer. Examples of billers are utilities, government, merchants, and intermediate billing services such as banks. The billing statement is typically customized according to the biller's preferences. For example, it is common for billing statements to be printed on colored paper, display the biller's logo, provide a billing summary, and show itemized transactions. This information is organized in a custom format that is unique to and controlled by the biller.

The biller also creates remittance information that associates the consumer account with the bill and any payment toward the bill. The remittance information is typically in the form of a detachable stub or coupon that the consumer detaches from the billing statement and returns along with the payment. This remittance stub is also customized according to the biller's preferences. Frequently, the consumer is

instructed by the biller to copy remittance information from the bill onto the check for the payment being made. The inclusion of consumer account information is designed to minimize errors in attributing the payment to the consumer's account. In many cases, due to transcription errors, this attempt to reduce errors actually

5   introduces more problems than it solves.

There are many ways for a consumer to respond to a bill. One set of responses concerns payment of the bill. In the simplest case, the consumer pays the bill in full. The consumer selects a payment method (e.g., check, cash, credit card, debit card, electronic account debit, and so forth) and authorizes full payment. The

10 consumer may alternatively decide to pay a partial amount of the bill. In this case, the consumer authorizes only partial payment, such as writing a check for less than the billed amount. Another alternative is to avoid payment, although this is typically not recommended.

Another set of possible responses to a billing statement is to challenge part of,

15 or the entire bill. The consumer must call the billing company and discuss the matter with a representative or in many cases, is asked to submit a written letter explaining why the bill is inaccurate.

Another set of responses concerns administrative items. For instance, the consumer may send in a change of address, or request more self-addressed stamped

20 envelopes or the like.

Apart from billing-related matters, it is common for billing companies to include other inserts with their billing statements that may require some form of response from the consumer. For instance, the billing company might include offers from the company or a third party company to purchase or use their goods and

25 services. A phone bill, for example, might contain an offer from the phone company to register for a calling card. The same phone bill might also offer the consumer a

credit card sponsored by a third party company. If the consumer is interested in a calling card or credit card, he/she fills out the registration form and submits it by mail to the appropriate party.

Billing statements may also include surveys, contents, advertisements, and so
5   forth, all of which require a different type of response from the consumer.

With the growing popularity and use of personal finance computer software, there is an evolution toward changing the paper-based billing system to an electronic billing system. It would be beneficial, for example, for billers to distribute their billing statements electronically and for consumers to analyze the bills and pay them
10   electronically.

However, the ability to handle a wide range of consumer responses, within the electronic setting, posses a significant roadblock to further deployment of electronic billing systems. Unfortunately, most finance computer software focuses primarily on asset management, with some emphasis on electronic bill payment, but with little
15   innovation in bill distribution, presentment, and response coordination.

There is a prior art electronic bill payment system, however, that mentions the possibility of electronic bill distribution. This system is described in U.S. Patent No. 5,465,206, entitled "Electronic Bill Pay System," which issued November 7, 1995 and is assigned to Visa International. The Visa bill payment system permits bills to
20   be sent to consumers via U.S. mail or email. Unfortunately, the system is limited in that the email message containing the bill must conform to requirements imposed by Visa. The requirements stem from the need to route remittance information back to the biller through the VisaNet® network. The biller has little or no control over the format concerning how the bill is presented to the consumer or what kind of
25   responses may be used in conjunction with the bill. Instead, the biller must accommodate a format compatible with the VisaNet® network.

It would therefore be advantageous to devise an electronic bill distribution system that enables the biller to directly control how the bill is presented, and the types and organization of responses that a consumer could make to the electronic bill.

There is another problem facing acceptance of electronic bill distribution

5   systems. Billers may not be capable of, or may not wish to engage in, the task of electronically distributing billing statements or handling electronic responses from the consumer. From a biller perspective, it might be more advantageous to contract with a billing service to handle the electronic bill distribution tasks. However, contracting with a third party raises additional concerns. It is in the interest of the

10   billing service to standardize the electronic distribution process to efficiently achieve economies of scale. Yet, the biller prefers that their bills be presented in customized formats, and that they control how responses to the bill are handled. Thus, for an electronic bill distribution system to be successfully adopted, it should accommodate the biller preferences of individuality while simultaneously facilitating the billing

15   service's interests of standardization.

Another design consideration is that many billers already have established sophisticated, expensive accounting systems. It would be beneficial to devise a bill distribution system that integrates smoothly with entrenched accounting systems so that companies are not required to change their traditional ways of practice.

20

SUMMARY OF THE INVENTION

This invention concerns a system and method for designing electronically remittable responses to electronically distributed billing statements. The electronic billing system provides a set of tools for a biller to create and design customized

25   responses to the billing statements. The biller independently controls the appearance and format of the billing statement and how actions on the part of the consumer, or

the content of the statement, or the current state of the bill or statement with respect to processing by the consumer while in the hands of third party statement distribution service, cause or permit certain consumer responses to the statement. Once the statement and all relevant responses are designed, the biller provides the statement

5   and response format to a third party billing service, which generates the electronic billing statements in the biller-designed format and electronically distributes the billing statements.

According to one implementation, the electronic billing system has a biller integration system implemented at the biller. The biller integration system has a

10   statement response designer to enable the biller to design the responses. The statement response designer offers a response wizard to guide the biller through the process of creating responses. The statement response designer includes a set of predetermined responses from which the biller can elect to include with the electronic billing statement, such as change of address, payment, comment, etc. Additionally,

15   the statement response designer enables the biller to design customized responses that are unique to the biller.

The biller integration system also has a response selection rules manager to establish rules concerning when certain responses are conditionally included with the electronic billing statement during electronic distribution. The response selection

20   rules manager has a graphical user interface (UI) that presents a list of responses and enables the biller to specify for each of the responses a condition upon which the response is to be included with the billing statement.

If a billing service is used, the biller sends the statement, responses, and data to the billing service. The billing system includes a response inclusion system

25   resident at the billing service to selectively include the responses with the electronic billing statements as dictated by the rules established by the biller integration system.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a diagrammatic illustration of an electronic bill presentment and payment system.

5   Fig. 2 is an example illustration of a graphical user interface window showing a billing statement for a company.

Fig. 3 is a diagrammatic illustration of a biller integration system employed in the billing system.

Fig. 4 is a block diagram of a biller computer that implements the biller

10   integration system of Fig. 3.

Fig. 5 is a diagrammatic illustration of a graphical user interface window for a response selection rules manager used to specify rules for inclusion of response in a billing statement.

Fig. 6 is a diagrammatic illustration of a graphical user interface box to assist

15   a biller in defining the rules.

The same reference numbers are used throughout the figures to reference like components and features.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

20   Fig. 1 shows an electronic bill presentment and payment system 20 that enables multiple billers to create and electronically distribute their billing statements to consumers over a network, such as the Internet. The bill presentment and payment system 20 is an electronic, computerized billing system having computing units at the billers and consumers.

25   The electronic billing system 20 has multiple biller integration systems 22(1), 22(2), ..., 22(N), one resident at each participating biller, and a service center system

24 resident at a third party billing service. The biller integration systems 22(1)-22(N) facilitate the design of templates for electronically renderable billing statements and for electronically remittable responses that the consumers use to respond to the billing statements.

5   Each biller integration system (BIS) 22(1)-22(N) integrates with the existing billing system of the biller. In this example, billers 1 to N have associated billing systems 26(1), 26(2), ..., 26(N). These billing systems are assumed to be computerized accounting systems that track consumer accounts and generate periodic billing statements. The billing systems are further assumed to be different from one 10   another, whereby each system 26 is unique or customized to the biller's preferences and needs.

          Each biller integration system 22(1)-22(N) is implemented with a translator 28(1)-28(N), respectively, to integrate with the legacy billing systems 26(1)-26(N). Each translator 28(1)-28(N) is preferably a software component that is uniquely 15   configured to translate billing data from a format used by the existing billing systems 26(1)-26(N) to a format compatible with the biller integration systems 22(1)-22(N). Since the billing systems 26(1)-26(N) are specialized to each particular biller, the translators 28(1)-28(N) are uniquely written for the corresponding legacy billing system of the biller.

20   The biller integration systems 22 enable the associated billers to create a statement template for an electronically renderable customized billing statement. In a preferred implementation, the BIS 22 is a set of software tools that assist the biller in designing the template. These tools are described below in more detail with reference to Figs. 3-6. The statement template specifies how the statement will 25   present billing information to a consumer. A more detailed discussion of the statement designer portion of the biller integration system 22 is described in a co-

pending U.S. Patent Application Serial Number _____, entitled "System and Method for Designing and Distributing Customized Electronic Billing Statements", which was filed on June 19, 1997 in the names of Howard Campbell, Warren T. Dent, Eric Jakstadt, Darren B. Remington, Bassam Saliba, Bert Speelpenning, and

5   George Webb. This application is assigned to Microsoft Corporation and is incorporated by reference.

This invention is particularly directed to another aspect of the biller integration system 22, which concerns an ability for the billers to specify how consumers respond to the electronic bill. There are many possible response formats.

10   For instance, the biller might provide a payment form that permits the consumer to pay the bill, or a change of address button that permits the consumer to open a dialog box and change his/her address. The biller integration systems 22 further permit the billers to design customized response handling processes to manage incoming responses from the consumers. In this manner, the billers are in complete control of

15   both how the bill is presented to the consumers and how the consumers respond to the bill.

Each biller integration system 22(1)-22(N) packages the statement template together with the billing information and response data in a standardized file 30. More particularly, the file 30 contains the statement template, the account data for the

20   consumers whom the biller wants to receive statements, and a set of resources. As used herein, a "resource" generally refers to non-billing data information, such as phone numbers for service information, advertisements, biller logos, regulatory messages, give-aways, and so forth. Since these bills are electronic, resources may be in the form of video clips, sound clips, pictures, and other such content.

25   The billing file 30 also includes a set of rules. These rules break down into two categories. A first category of rules governs when certain billing information is

added to the billing statement. For instance, the biller might wish to include in the bill some information on a savings plan for any consumer who spends more than a threshold amount each month. When a particular consumer satisfies that threshold, the savings plan information resource is automatically added to the electronic bill in accordance with the rule.

A second category of rules pertains to responses, governing when responses are appropriate and what type of response should be used in certain situations. For example, a credit card company might offer a consumer with high spending habits an opportunity to purchase a vacation package, while offering a consumer who spends less money a chance to purchase a toaster. The biller would establish a rule specifying what type of offer to include with the billing statement, and stipulating how the consumer responds to the offer.

The billing file 30 is sent to the service center system 24. The format of file 30 is standardized in the sense that the service center system 24 expects to receive the same formats from each biller. It is noted that the account data can also be sent in separate batches independently of the template file. The data may be sent to the billing service more frequently than changes to the templates and rules. For instance, the data may be sent as often as daily or twice daily, whereas the template and rules may be changed less frequently like once a month.

The service center system 24 has an electronic bill distribution system that electronically distributes the billing statements on behalf of the billers. The service center 24 receives the standardized files 30 from the billers and unpackages the statement template, rules, and resources. The service center 24 then generates the customized billing statements for each biller from the statement template and the billing information received from that biller.

The service center system 24 includes a response management system (RMS) 32 to selectively include certain responses with the electronic billing statements according to the rules established by the biller. For instance, for a consumer meeting the spending threshold, the RMS 32 includes the vacation package offer within the

5 electronic billing statement going to that consumer. For a consumer who does not satisfy the spending threshold, the RMS 32 includes the toaster offer within the electronic billing statement for that consumer.

The billing statements 34 are electronically distributed to consumers 36(1), 36(2), ..., 36(M) over the Internet 38. The electronic bills 34 each contain a bill

10 portion with account and transaction information, a remittance portion that is to be returned to the biller, and other possible response portions (if any) which may be returned by the consumer. The consumers each have a user interface unit to render the electronic bill for viewing. A user interface unit is a computerized device, such as a computer (e.g., personal computer, laptop, handheld computer, etc.) or an

15 Internet-enabled television, which renders the billing statements through a graphical user interface (UI) on a display. For convenience, the terms "consumer", "consumer unit", or "consumer interface unit" are used interchangeably throughout this disclosure and referenced by the same numbers.

All responses from the consumers go back to the response management

20 system 32 for routing as directed by the response designer. Alternatively, the response designer can create responses that are sent directly to a third party, but such responses require no direct intervention or explicit action by the consumer beyond simply completing the response. In such cases, the response itself, on submission by the consumer, contains routing and transmission instructions; the consumer does not

25 need to send an email or doing anything other than submit the response in order for it to be properly routed.

In Fig. 1, after the consumer has reviewed the bill, he/she can elect to pay the bill electronically. The remittance portion 40 is returned to the appropriate biller (via the response routing sub-component of the Response Management System). The payment phase of the billing system, as well as the settlement phase, are not

5   discussed in this document. An entire electronic billing system is described in U.S. Patent Application No. 08/734,518, entitled "Electronic Bill Presentment and Payment System", which was filed October 18, 1996 in the names of Darren Remington and Warren Dent, and is assigned to Microsoft Corporation. This application is incorporated by reference.

10   The consumer may also choose to respond to an offer, advertisement, or other insert in the billing statement. For example, the consumer may decide to register for the vacation package. The consumer would complete the online registration form, the RMS would then route the response 42 as directed by the designer of the response, either back to the biller or to a third party 44.

15   Fig. 2 shows an example illustration of a graphical user interface with a billing statement 50 for a company named "GPU Energy". In this example, the billing statement 50 is written in a "markup language," such as HTML (Hypertext Markup Language). HTML is a subset of SGML (Standard Generalized Markup Language), a language formally defined as "a language for document representation that

20   formalizes markup and frees it of system and processing dependencies." HTML documents are compatible with the World Wide Web. The HTML billing statement 50 is rendered by an Internet browser application, such as the Internet Explorer browser from Microsoft Corporation, which executes on the consumer's computer.

The billing statement 50 appears as designed by the biller. In this example,

25   the billing statement has a banner stripe 52 across the top to show biller and consumer information. The banner stripe 52 contains a company logo "GPU

Energy" and the consumer's name and address. The banner stripe 52 may also

contain advertisements, announcements, or other types of information. Here, the bill

contains a "Repair Service Information" button 54.

The billing statement 50 has multiple softkeys or buttons 56 that form tabbed

5   navigation points to facilitate quick movement from one section of the bill to another.

In this example, there is a "Summary" tab that references the billing page shown in

the figure. Activation of a "Details" tab (via a mouse pointer, for example) changes

the screen from the summary page to one or more pages itemizing the billing

transactions. A "Customer Service" tab switches to a page giving instructions on

10 how to access customer service.

The billing statement 50 has a main body 58 that contains the billing

particulars. On the summary page of the GPU Energy bill, the billing particulars in

body 58 include an amount due, an amount previously paid, a billing period, and

statistics on energy usage. On the "Details" page, the billing information in the body

15. 58 might include line items detailing a purchase date, purchase order number, invoice

number, item number, description of item, quantity, price, total, tax, and amount due.

The billing statement in Fig. 2 is merely one example. There are infinitely

many ways to organize and present data. In addition, the billing statement may

contain other items, such as embedded hyperlinks, executable code, and pop-up

20 dialog boxes, which provide additional design flexibility and customization. The

biller can essentially create any aesthetics, organization, and detail that it prefers.

There are many ways to respond to the electronic billing statement 50. For

instance, the consumer can decide to pay the bill in full. In such a case, the consumer

clicks the "pay" label and authorizes full payment of the bill. The payment

25 authorization and remittance information are electronically routed back to the

appropriate parties (e.g., consumer bank, biller, biller bank, etc.) Another response to

the bill 50 might be to activate the "Repair Service Information" button 54. If the consumer activates button 54, the consumer's computer sends an electronic message to a customer services representative over the Internet and the consumer can initiate an online discussion with the representative, or alternatively, the message could be

5   sent to a queue at the biller for later processing by the biller's customer service group, which might initiate a call to the consumer in a corresponding and analogous manner.

The consumer might also respond to the bill 50 by activating a change of address button located beneath the consumer's address in the banner portion 52.

10   Clicking on the button causes a dialog box to pop-up, requesting the consumer to fill out a new address. Upon completion, a message containing the new address is included in the remittance information or as a separate email to the biller.

Fig. 3 shows the biller integration system 22 in more detail. It includes the translator 28 to convert the billing data from the biller's legacy billing system into

15   data acceptable to the BIS 22 and service center 24, and a database 60 to hold the converted billing data. The BIS 22 also includes a statement designer 62 to create and design the statement template. The statement designer 62 enables the biller to embed and organize data fields, resource fields, and conditional fields within the statement template and to associate the respective billing data, resources, and rules

20   with the fields. The statement designer 62 preferably supports a graphical user interface that presents the statement template to the biller during construction. After the template is finished, it is stored as a template file in a template store 64.

The BIS 22 has a rules manager 66 to establish the rules for inclusion or exclusion of resources in the billing statement. The rules manager 66 associates the

25   particular data or resources with the conditional fields in the statement template and defines the conditions under which the data or resources are inserted into the

conditional fields. When the service center generates the electronic billing statements, the statements in which the conditions are met will contain the associated data or resources while the statements in which the conditions are not met will not contain any associated data or resources. The rules set by the rules manager 66 are

5   stored in a rules store 68.

The BIS 22 has a resource manager 70 to assist the biller in creating the resources and a resource store 72 to keep the resources. The resources may be in the form of text files, graphics files, audio files, video files, and the like. The BIS 22 further includes an advertising manager 74 to help create advertisements to be

10   included in billing statements, and an advertisement store 76 to hold the advertisements.

The BIS 22 has a statement response designer 78 to enable a biller to design the electronically remittable responses. The statement response designer 78 enables the biller to develop one or more types of responses. Four example types of

15   responses include a form response, a mail response, a download response, and a customer service response. A "form" response is a document (such as an HTML document) to which the consumer can respond. The document has embedded edit controls whose values are mapped to database fields. For example, when the consumer authorizes payment of a bill, a response form might include a data field

20   with the amount due, a payment date field with the payment date, an amount paid edit control with the amount entered by the consumer, and so forth. The data entered by the consumer on the form is returned to the biller, and automatically inserted in the appropriate database fields for processing.

A "mail" response is one in which the user is asked to enter data and the data

25   collected is transmitted to a designated address. For example, a response for a credit card offer might entail asking the consumer to fill out a registration application via a

pop-up dialog box. The information entered by the consumer is packaged in an email message and sent to the card issuing company for approval.

A "download" response is one that permits delivery and installation of executable code on behalf of the biller. As an example, a credit card company might offer in its billing statement an opportunity for the consumer to transfer balances on other credit cards to that company's credit card. As part of the offer, the company might allow the consumer to download a program that analyzes the consumer's present debt and how the debt transfer would affect monthly payments.

A "customer service" response is one that enables the establishment of an electronic connection between the consumer and the biller customer service organization. This connection can be as simple as the transfer of formatted data from the consumer to the biller for asynchronous processing and response by biller customer support staff. More complicated responses, delivering data from the consumer to the biller in relational form, for example, or delivering a near real-time response back to the consumer, or establishing a real-time, digital chat or voice and video session between the Consumer and the next available customer service representative, are also possible.

It is noted that the four types of responses are provided for example purposes. Other types of responses are possible. Moreover, the system enables design of essentially any type of response perceived by the biller.

The biller-designed responses are stored in a response store 80. The responses are included in the data file 30 to be sent to the service center.

A response selection rules manager 82 establishes rules concerning when certain responses are to be conditionally included with the electronic billing statement during electronic distribution to the consumer. In the example introduced above, the credit card company might offer a consumer with high spending habits an

opportunity to purchase a vacation package, while offering a consumer with low spending habits a chance to purchase a toaster. The response selection rules manager 82 enables the biller to establish a rule specifying whether the vacation package or toaster offer is inserted into the statement. The response selection rules manager 82

5   further allows the biller to easily link the rule to the resource(s) to be included in the billing statement. The rules created by the manager 82 are stored in memory 84 and included in the billing data file 30.

A response processing designer 86 permits the biller to establish some processing guidelines on how to receive and handle the electronically remitted

10   responses from the consumers. Processing tasks might such things as determining whether the response includes full payment, partial payment, or no payment. Depending upon the outcome, the response might be routed to different modules of the billing system. For responses that include a challenge to a bill item or amount, the biller might specify that such responses are passed through to customer service

15   for review. For responses to third party advertisements, the biller might save the responses in a database that is ultimately returned to the third party. For responses to a survey, the biller might require aggregating large numbers of survey responses in a relational database and statistically analyzing the results.

The processing tasks developed by the biller are stored in a tasks store 88.

20   These processing guidelines may be included in the file sent to the service center, or alternatively are distributed internally to handle incoming responses.

A preview subsystem 90 is incorporated into the biller integration system 22 to allow the biller to preview how a sample billing statement will appear. The preview subsystem 90 retrieves the template from the template store 64 and uses

25   sample data (which is included within the embedded fields of the template) to

generate a sample billing statement. The sample is displayed on a computer screen for the biller to review and analyze the statement's appearance.

The template, rules (including selection rules), and resources (including responses) are bundled together and packaged in the BIS gateway 92. The package is

5   then sent to the service center 24 for generation and distribution of the electronic billing statements.

Fig. 4 shows the biller integration system 22 implemented on a computing system 100 at the biller. The biller's computing system 100 includes a processing unit 102, a volatile memory 104 (e.g., RAM), a non-volatile data memory 106 (e.g.,

10   disk drive, etc.), a display 108, an input device 110 (e.g., keyboard, mouse, track ball, stylus, etc.), an I/O port 112 (e.g., modem, network card, ISDN connection, etc.), and a non-volatile program memory 114 (e.g., ROM, disk drive, CD-ROM, etc.). As an example, the biller computing system 100 can be implemented as a conventional personal computer (PC) or a workstation. The computer components are

15   interconnected by an electronic interconnect structure which consists of parallel and serial conductors, such as SCSI-, PCI-, and RS 232-compatible conductors.

The biller's computer 100 runs an operating system (not shown) which supports multiple applications. The operating system is stored on the memory 114 and executes on the processing unit 102. The operating system is preferably a

20   multitasking operating system that allows simultaneous execution of multiple applications. The operating system employs a graphical user interface windowing environment that presents the applications or documents in specially delineated areas of the display screen called "windows." Each window has its own adjustable boundaries that enable the bill designer to enlarge or shrink the application or

25   document relative to the display screen. Each window can act independently, including its own menu, toolbar, pointers, and other controls, as if it were a virtual

display device.   One preferred operating system is a Windows brand operating

system sold by Microsoft Corporation, such as Windows 95, Windows NT, Windows

CE or other derivative versions of Windows.   However, other operating systems that

provide windowing environments may be employed, such as the Macintosh OS from

5   Apple Corporation.

The BIS 22 is implemented as software modules stored in program memory

114.   The modules—translator module 28, statement designer module 62, rules

manager module 66, resource manager module 70, advertising manager module 74,

statement response designer module 78, response selection rules manager 82, and

10   response processing designer 86—run on the operating system.   In a preferred

implementation, the resource manager 70 and advertising manager 74 are

implemented as HTML development software, such as Visual InterDev from

Microsoft Corporation.   The statement designer 62, rules manager 66, statement

response designer 78, response selection rules manager 82, and response processing

15   designer 86 are implemented as extensions of the Visual InterDev software.   The data

60, templates 64, rules 68, resources 72, advertising information 76, responses 80,

selection rules 84, and processing tasks 88, which are produced by the modules, are

stored in the data memory 106.

When the biller desires to design a response to an electronic billing statement,

20   the biller launches the statement response designer 78.   The statement response

designer 78 includes an extension to the Visual InterDev software in the form of a

Response Template Wizard that guides a biller through the creation and design of a

response. When the Wizard is activated, it presents a series of screens that give step-

by-step instructions concerning how to develop one or more types of responses (e.g.,

25   form response, mail response, download response, customer service response, etc.).

One aspect of this invention is to include within the statement response designer 78 a set of standard responses from which the biller can select when creating responses. The biller can submit the standard responses in their original form, or use them as a starting point for customizing different versions. An example set of standard responses include:

- A payment form to handle simple bill payment.

- A payment form which includes automatically calculated discounts or penalties, the choice of which is based on early or late payment, or payment in full versus partial payment.

- An additional payment form to accommodate extra payment on an already-paid bill.

- A print payment form to allow the consumer to mail in payment with check.

- An accept/decline form which offers the consumer a choice.

- A change of address form.

- A comment or feedback form.

- A consumer survey form.

- A "special offer" order form.

- A customer service request

- An application form for new services and products.

- An order form for products in a biller's electronically distributed catalog.

- A fax response form to pass orders to a non-electronic order location.

One advantage of this invention is that the biller can create different versions of responses. For instance, the biller might create a first version of a response using a particular schema and layout that is used for a credit survey. Then, after the results

are tabulated, the biller might wish to offer a credit card to approved consumers using a similar schema and layout so that the consumer can visually relate the two concepts. Both versions of the responses can be stored in the response store 80.

5   The statement response designer 78 presents a graphical user interface window containing a blank response form, or a version of an existing response. The biller then creates the response using an assortment of graphical tools. For instance, a response for a credit card offer might consist of constructing an offer icon for placement in the billing statement and then several pop-up screens that appear when the consumer activates the offer icon. A first screen might contain a registration

10   form with fields for personal data. A second screen might request financial/credit information. A third screen might provide an opportunity for the consumer to approve or decline sending the response.

       Creation of the response can involve drag-and-drop operations. For instance, the consumer may drag a file containing the biller's logo onto a response form. The

15   drag-and-drop operation causes the statement response designer to create a field "<Logo>" at the position in the response form designated by the biller and to associate the field "<Logo>" with the logo file. When the response is generated, the logo file is inserted into the appropriate resource field.

       The drag and drop aspects are preferably implemented using object linking

20   and embedding (OLE), which is commercially available from Microsoft Corporation under a technology known as "ActiveX." OLE is an extensible service architecture built on the Component Object Model (COM) which is both language independent and location independent. OLE supports an OLE Drag and Drop that is widely used in Windows-compatible operating systems. OLE and COM have been well

25   documented and will not be explained in detail. For more information regarding OLE and COM, refer to OLE 2 Programmer's Reference and Inside OLE 2, Second

Edition, both published by Microsoft Press of Redmond, Washington, and both of which are hereby incorporated by reference.

As another example, the biller might construct a form response by placing a focus on a location in the response document, opening a menu from the UI (e.g., pull

5   down menu from toolbar, popup dialog box, etc.), and selecting options entitled "Insert Data Field". This option displays a dialog showing possible fields that the designer might wish to insert. The menu facilitating insertion of fields is also an extension of the Visual InterDev software. When creating a form for partial or full payment, the biller might want to include an "Amount Due", and "Amount Paid",

10   and an "Explanation". The statement response designer 78 associates the appropriate data (i.e., amount due and amount paid) with the fields, and adds a dialog box for the consumer to explain a partial payment.

After the biller creates the responses, the biller defines rules specifying when and if various responses are to be included with the billing statements. The biller

15   invokes the response selection rules manager 82 to help define the rules. The response selection rules manager includes an extension to the Visual InterDev software in the form of a design time extension. Building design time controls is described in detail in two Design-time Control SDK (Software Developers Kit) documents published by Microsoft Corporation under the titles "HTML Design-

20   time" by Diane Tompkins and Douglas Hodges, and "Building and Hosting Design-Time ActiveX Controls" by Jay Massena and Douglas Hodges.

Fig. 5 shows an example of a graphical user interface window 120 presented by the response selection rules manager 82. It includes a list 122 of responses, as represented by "Response 1" and "Response 2", and a list 124 of possible messages

25   that might be included as the response. Suppose for example, the biller wants to include a response (say Response 1) in every billing statement. However, depending

on how much each particular consumer spent, the biller would like to offer different products. If the consumer is a big spender, the biller wants to offer a vacation package. If the consumer does not spend much money, the biller would like to offer a toaster. If the consumer rarely spends money, the biller would like to offer a coffee

5 cup.

The rules manager UI 120 enables a biller to graphically link the responses in the first list 122 with the resources in the second list 124. As one example, the biller can draw lines between the two lists to map a response to a resource. The graphical lines may also be configured in some manner (i.e., numbered, colored, etc.) to

10 indicate the priority. In this example, the Response 1 is linked to three different messages: a vacation package offer, a toaster offer, and a coffee cup offer.

To define a rule, the biller activates one of the lines between the response name and resource (e.g., by clicking on the line with a mouse pointer). This action pops up a condition dialog box that allows the biller to set the condition under which

15 the various message appear as the response to be included with the billing statement.

Fig. 6 shows an example of a graphical dialog box 130 invoked by the response selection rules manager 82 when the biller activates the line between the Response 1 and Vacation Package in Fig. 5. This dialog box 130 contains the condition for determining when the vacation package is included as the billing insert,

20 as opposed to the toaster offer and coffee cup offer. The dialog box 130 defines the condition in a format of a "statement", followed by an "operation", followed by a "value".

The condition box 130 has a statement parameter 132 that contains a consumer or billing related parameter, such as amount due, due date, consumer name,

25 consumer zip, and so forth. A condition parameter 134 specifies an operation value, such as =, >, <, ≥, ≤, contains, starts with, and so forth. A value parameter 136

contains a value that the biller sets as a threshold or trigger to invoke the condition. In this example, the biller defines a rule to insert the vacation package offer in a consumer's billing statement as Response 1 if the condition "Amount Due is greater than $1,000" is met.

5   It is advantageous to separate the response design from the rules definition. It is likely that the responses may not change very often, or only experience minor changes. However, the biller is likely to change the conditions for inserting such response on a monthly basis. With the BIS architecture, the biller can separately change the rules using the rules manager without affecting the response design.

10   The electronic billing system is advantageous in that it enables the biller to directly control how electronically remittable responses to electronic bills are presented and handled. The system also integrates easily with the biller's legacy accounting systems.

       Although the invention has been described in language specific to structural
15   features and/or methodological steps, it is to be understood that the invention defined in the appended claims is not necessarily limited to the specific features or steps described. Rather, the specific features and steps are disclosed as exemplary forms of implementing the claimed invention.

CLAIMS

1.   An electronic billing system comprising:

a biller integration system to enable a biller to design an electronic billing statement and multiple electronically-remittable responses that a consumer can use to respond to the electronic billing statement, the biller integration system establishing rules concerning when certain ones of the responses are conditionally included with the electronic billing statement when electronically distributed to the consumer; and

a response management system to selectively include one or more of the responses with the electronic billing statements during electronic distribution according to the rules established by the biller integration system.

2.   An electronic billing system as recited in claim 1, wherein the biller integration system is resident at the biller and the response management system is resident at a third party billing service.

3.   An electronic billing system as recited in claim 1, wherein the biller integration system includes a set of predetermined responses from which the biller can elect to include with the electronic billing statement.

4.   An electronic billing system as recited in claim 1, wherein the biller integration system enables the biller to design customized responses that are unique to the biller.

5.   An electronic billing system as recited in claim 1, wherein the biller integration system enables the biller to design responses according to a type selected from a set of types comprising (1) a form response in which data is entered by the consumer into a form and returned to the biller, (2) a mail response in which data

5   collected from the consumer is electronically transmitted to a prescribed address, (3) a download response in which the consumer elects to download executable code, and (4) a customer service response in which an electronic connection to a biller customer service organization is established.

10   6.   A biller integration system comprising:

a statement response designer to enable a biller to design multiple electronically-remittable responses to an electronic billing statement, the responses being designed for electronic distribution with the electronic billing statement so that a consumer can utilize the responses to respond to the electronic billing statement;

15   and

a response selection rules manager to establish rules concerning when certain ones of the responses are to be conditionally included with the electronic billing statement for electronic distribution to the consumer.

20   7.   A biller integration system as recited in claim 6, wherein the statement response designer comprises a graphical user interface that presents the response during construction.

8.   A biller integration system as recited in claim 6, wherein the response selection rules manager comprises a graphical user interface (UI) that presents a list of responses and enables the biller to specify for each of the responses a condition upon which the response is to be included with the billing statement.

5

9.   A biller integration system as recited in claim 6, wherein the statement response designer includes a set of predetermined responses from which the biller can elect to include with the electronic billing statement.

10   10.   A biller integration system as recited in claim 6, wherein the statement response designer enables the biller to design customized responses that are unique to the biller.

11.   A biller integration system as recited in claim 6, wherein the statement

15   response designer enables the biller to design responses according to a type selected from a set of types comprising (1) a form response in which data is entered by the consumer into a form and returned to the biller, (2) a mail response in which data collected from the consumer is electronically transmitted to a prescribed address, (3) a download response in which the consumer elects to download executable code, and

20   (4) a customer service response in which an electronic connection to a biller customer service organization is established.

12.   A biller integration system as recited in claim 6, further comprising a response processing designer that enables the biller to specify how to handle the

25   electronic responses received from the consumer.

13.   A biller integration system as recited in claim 6, wherein the statement response designer and the response selection rules manager are embodied as software modules stored on a computer-readable medium.

5   14.   A billing statement response designer embodied as a computer module on a computer-readable medium, comprising:

code means for constructing an electronically-remittable response to an electronic billing statement, the response being designed for electronic distribution with the electronic billing statement so that a consumer can utilize the response to 10   respond in some manner to the electronic billing statement;

code means for customizing how the response visually appears according to the biller's preferences; and

code means for specifying how the response is to be electronically returned for processing.

15

15.   A response selection rules manager embodied as a computer module on a computer-readable medium, comprising:

code means for establishing one or more rules that define when to include an electronically-remittable response with an electronically-renderable billing statement; 20   and

code means for associating the response with the rule.

28

16.   A response selection rules manager as recited in claim 15, further comprising code means for presenting a graphical user interface (UI) that presents a list of responses and enables the biller to specify for each of the responses a condition upon which the response is to be included with the billing statement.

5

17.   A method for preparing electronic billing statements comprising the following steps:

designing an electronically-renderable billing statement according to a biller's preferences;

10   designing one or more electronically-remittable responses according to the biller's preferences;

establishing rules concerning when certain ones of the responses are conditionally included with the electronic billing statement when electronically distributed to the consumer; and

15   selectively including ones of the responses with the electronic billing statements during electronic distribution according to the rules.

18.   A method as recited in claim 17, further comprising the step of choosing a response for possible inclusion in the billing statement from a set of 20   predetermined responses.

19.   A method as recited in claim 17, wherein the step of designing responses comprises the step of customizing the response that are unique to the biller.

20.   A method as recited in claim 17, wherein the step of establishing the rules comprises the following steps:

presenting within a graphical user interface (UI) a list of responses; and

enabling a biller to specify for each of the responses a condition upon which

5   the response is to be included with the billing statement.

21.   A method as recited in claim 17, further comprising the following steps:

storing one of the responses as a first version;

10   recalling the first version of the response;

modifying the response to create a second version; and

storing the second version of the response.

22.   In an electronic billing system, a method comprising the following

15   steps:

constructing an electronically-remittable response to an electronic billing statement, the response being designed for electronic distribution with the electronic billing statement so that a consumer can utilize the response to respond in some manner to the electronic billing statement;

20   customizing how the response visually appears according to the biller's preferences; and

specifying how the response is to be electronically returned for processing.

23.   A method as recited in claim 22, further comprising the step of

25   presenting a wizard user interface that assists the biller in designing the response.

24.   A method as recited in claim 22, wherein the constructing step comprises the step of designing the responses according to a type selected from a set of types comprising (1) a form response in which data is entered by the consumer into a form and returned to the biller, (2) a mail response in which data collected from the consumer is electronically transmitted to a prescribed address, (3) a download response in which the consumer elects to download executable code, and (4) a customer service response in which an electronic connection to a biller customer service organization is established.

25.   A computer program embodied on a computer-readable medium to perform the steps in the method as recited in claim 22.

26.   In an electronic billing system, a method comprising the following steps:
       establishing one or more rules that define when to include a electronically-remittable response with an electronically-renderable billing statement; and
       associating the response with the rule.

27.   A method as recited in claim 26, further comprising the step of presenting a graphical user interface (UI) that contains a list of responses and enables the biller to specify for each of the responses a condition upon which the response is to be included with the billing statement.

28.   A computer program embodied on a computer-readable medium to perform the steps in the method as recited in claim 26.

Fig. 1
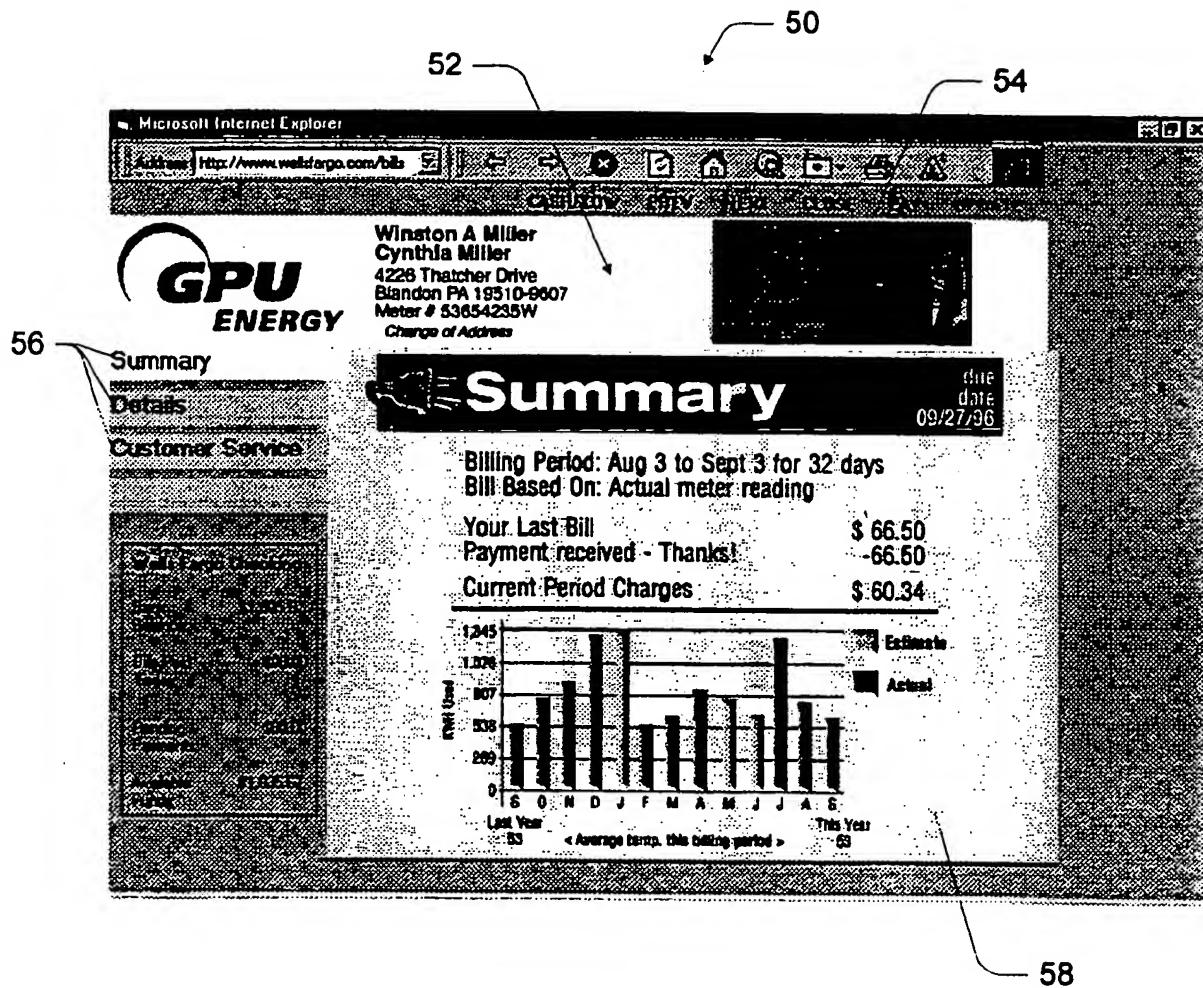
Fig. 2
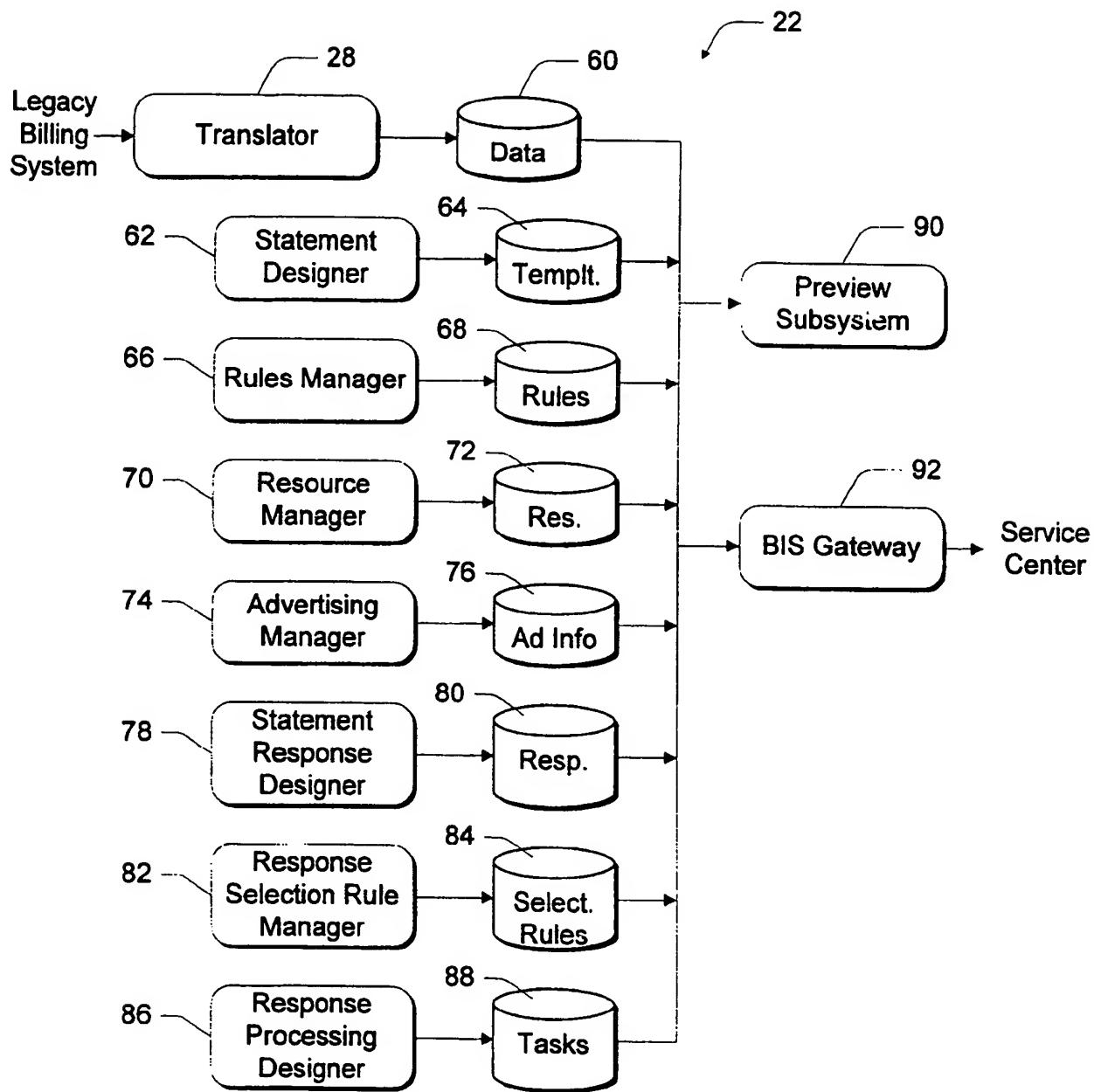
Fig. 3
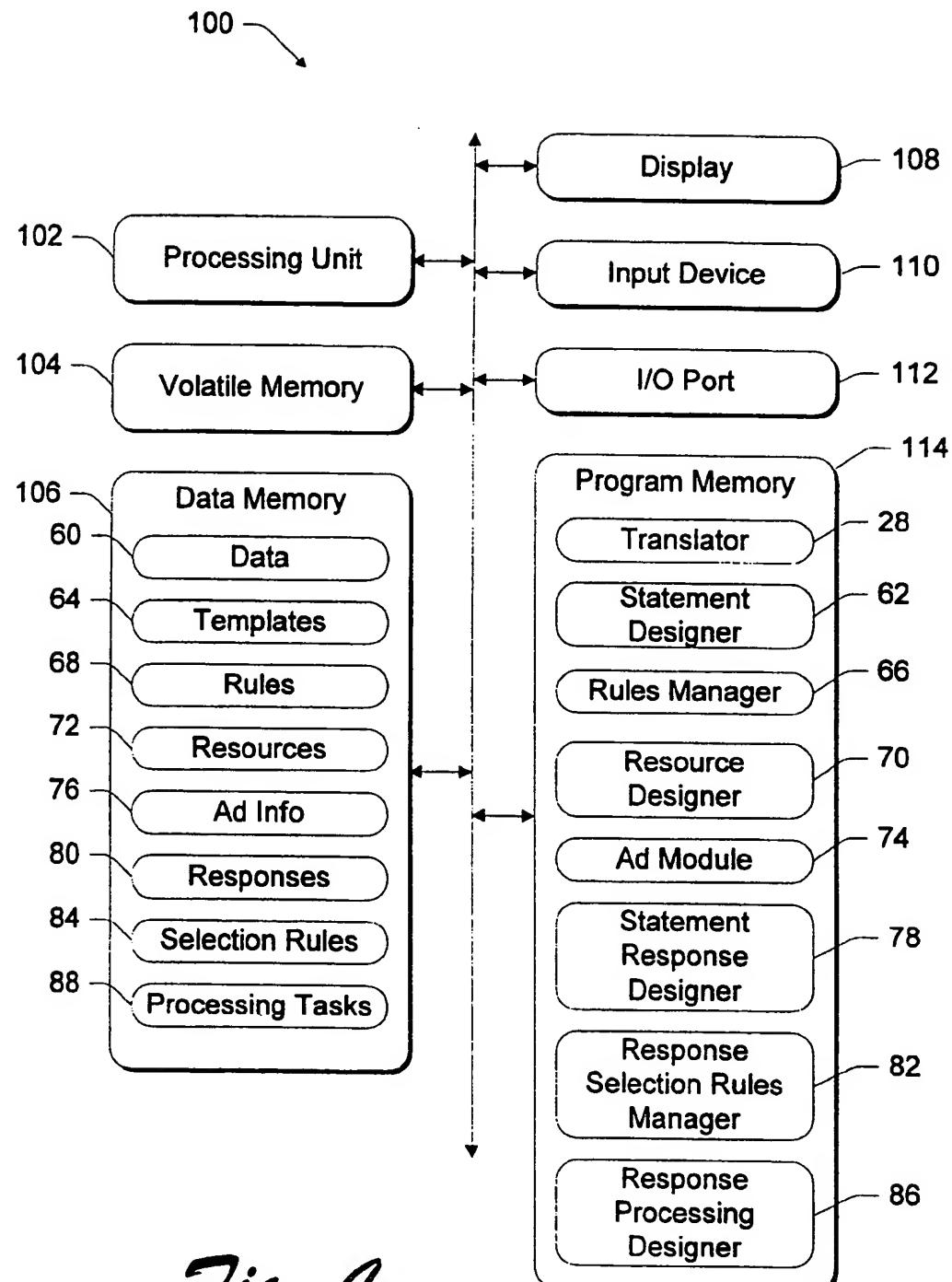
Fig. 4
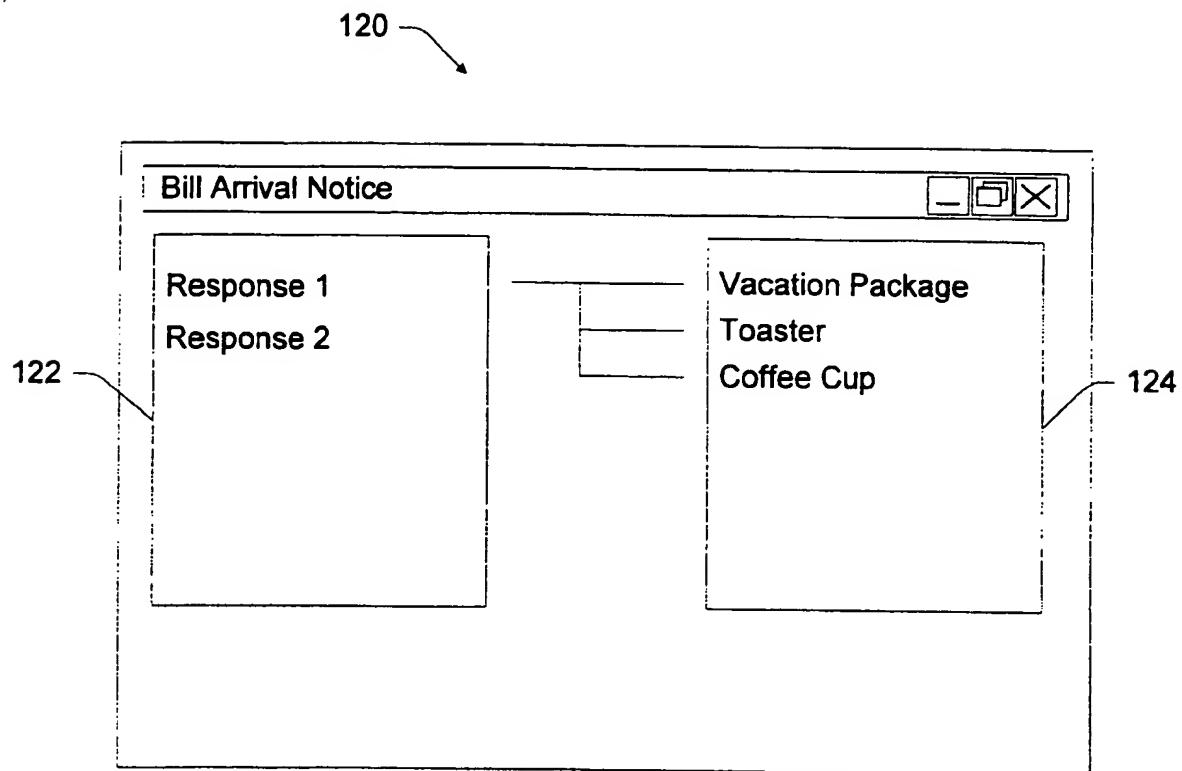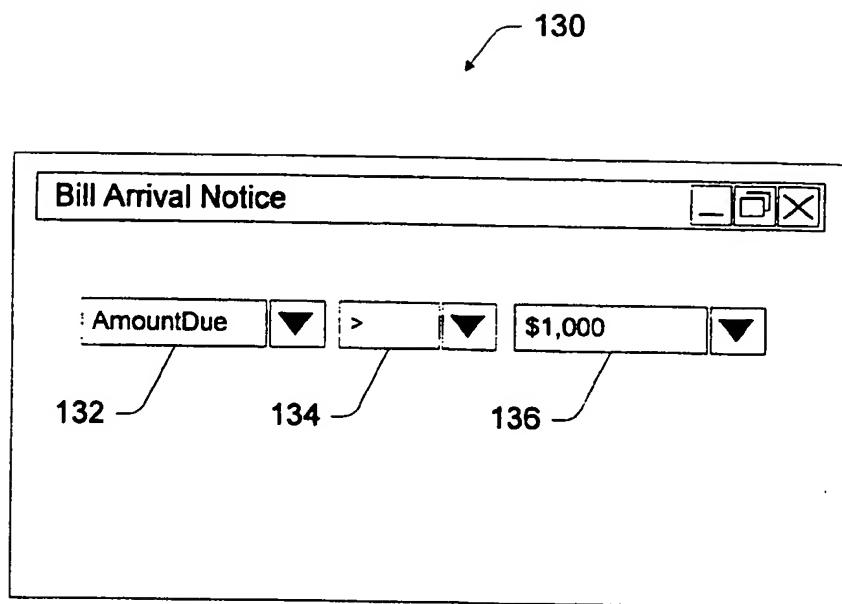
120

| Bill Arrival Notice | _ □ X |

Response 1

Response 2

Vacation Package

Toaster

Coffee Cup

122

124

Fig. 5

— 130

| Bill Arrival Notice | _ | □ | × |

| AmountDue | ▼ | > | ▼ | $1,000 | ▼ |

132   134   136

Fig. 6

INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6   G06F17/60

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6   G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 745 947 A (IBM CORPORATION) 4 December 1996 see abstract see column 3, paragraph 2 - column 4, paragraph 3	14,22,25
Y		1-13, 15-21, 23,24, 26-28

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[X] Further documents are listed in the continuation of box C.   [X] Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
4 December 1998	11/12/1998

Name and mailing address of the ISA	Authorized officer
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INTERNATIONAL SEARCH REPORT

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication.where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 97 24680 A (TELE-COMMUNICATIONS, INC) 10 July 1997 see abstract see page 2, paragraph 4 - page 5, paragraph 3 see page 22, paragraph 3 - page 26, paragraph 1 —————	1-13, 15-21, 23,24, 26-28

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